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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,787	01/28/2004	Shaomin Samuel Mo	MFA-238US	3987

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EXAMINER	
AGHDAM, FRESHTEH N	
ART UNIT	PAPER NUMBER
2611	
MAIL DATE	DELIVERY MODE
04/13/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/766,787	MO ET AL.	
	Examiner	Art Unit	
	FRESHTEH N. AGHDAM	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6-12 and 14-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 6-12, and 14-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application.
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 9, 2010 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1, 3, 6, 7, 9, 10, 12, 14, 15, and 17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 6, 7, 9, 10, 12, 14, 15, and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as

to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 3, and 6 combine two different embodiments of the invention (spec. par. 34), which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The other recited claims are rejected for similar reason.

Claims 1, 3, 6, 7, 9, 10, 12, 14, 15, and17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1, 3, and 6 combine two different embodiments of the invention (spec. par. 34), in which in one claim (base claim 1) two bit streams are transmitted simultaneously whereas in the other two claims (claims 3 and 6) the same two bit streams are transmitted one after another.

Therefore, the recited claims contain subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The other recited claims are rejected for similar reason.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6-12, and 14-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Son et al (US 2003/0189892).

As to claims 1, 3, 10, 12, 28, 31, 34, Son teaches a method of and/ or an apparatus for improving data transmission to a receiver utilizing multiple bands (Fig. 2, means 271; Fig. 8; Par. 35 and 41) comprising: mapping an input data to the multiple bands in a first band order (Par. 56); mapping the same data to the same plurality of the multiple bands in a second band order but has a different mapping pattern than the first band order (responsive to the reception of the error indicator from the receiver; Fig. 2, means 271; Fig. 8; Par. 35 and 41); and transmitting the bit stream in the first band order and the bit stream in the second band order for receipt by a receiver without changing a transmission frequency band of the multiple bands (Fig. 2, means 271; Fig. 8; Par. 35 and 41). One of ordinary skill in the art would recognize that it is well known in the art that the input data of Son comprises a bit stream.

Son does not expressly teach simultaneously transmitting signal in the first band order and the second band order for receipt by the receiver.

One of ordinary skill in the art would recognize that it is well known in the art, obvious, and/or a matter of design choice to utilize a type of diversity scheme such as frequency diversity scheme, wherein multiple versions of the same signal may be

simultaneously transmitted and/or received over different channels/frequencies and combined in the receiver.

Therefore, it would have been obvious to one of ordinary skill in the art to simultaneously transmit the bit stream in the first band order and the second band order instead of non-simultaneously transmitting the bit stream in the first band order and the second band order to improve the reliability of the bit stream.

As to claims 2 and 11, Son further teaches an OFDM system that operates in accordance with the subject matter of claims 1 and 10 cited above.

However, Son does not expressly disclose that multiple bands in the first and second band orders are selected from the ultra wideband (UWB) channel.

One of ordinary skill in the art would recognize that it would have been obvious to one of ordinary skill in the art to utilize the combination of OFDM with UWB in order to transmit large amounts of digital data over a wide spectrum of frequency bands with very low power as it is evidenced by. Therefore, it would have been obvious to one of ordinary skill in the art to utilize the combination of OFDM with UWB for the reason stated above.

As to claims 6 and 14, Son further teaches that the bit stream is mapped to the first band order in a frame time and the bit stream is mapped to the second band order in a subsequent frame time to the frame time in which the bit stream is mapped to the first band order (e.g. in response to retransmission request; Par. 55).

As to claims 7, 9, 15, Son further teaches a method of and/ or an apparatus for improving data transmission to a receiver utilizing multiple bands (Fig. 2, means 271;

Fig. 8; Par. 35 and 41) comprising: mapping an input data to the multiple bands in a first band order (Par. 56); mapping the same data to the same plurality of the multiple bands in a second band order but has a different mapping pattern than the first band order (responsive to the reception of the error indicator from the receiver; Fig. 2, means 271; Fig. 8; Par. 35 and 41); and transmitting the data in the first band order and the data in the second band order for receipt by a receiver without changing a transmission frequency band of the multiple bands (Fig. 2, means 271; Fig. 8; Par. 35 and 41); receiving the data in the multiple bands during a first transmission and the data in the multiple bands during a second transmission (Fig. 2, means 271; Fig. 8; Par. 35 and 41); demapping the first band order data to obtain the first band order data corresponding to the input data (Fig. 2, means 271; Fig. 8; Par. 35 and 41); demapping the second band order data corresponding to the retransmitted data (e.g. responsive to the error detection result of the first band order; Fig. 1A; Par. 56, 62, and 111-112); and inherently processing the first and second band order data to yield the transmitted data (Fig. 1A; Par. 56, 62, and 111-112). One of ordinary skill in the art would recognize that it is well known in the art that the input data of Son comprises a bit stream.

Son does not expressly teach simultaneously transmitting signal in the first band order and the second band order for receipt by the receiver.

One of ordinary skill in the art would recognize that it is well known in the art, obvious, and/or a matter of design choice to utilize a type of diversity scheme such as frequency diversity scheme, wherein multiple versions of the same signal may be

simultaneously transmitted and/or received over different channels/frequencies and combined in the receiver.

Therefore, it would have been obvious to one of ordinary skill in the art to simultaneously transmit the bit stream in the first band order and the second band order instead of non-simultaneously transmitting the bit stream in the first band order and the second band order to improve the reliability of the bit stream.

As to claims 8, 16-17, Son further teaches a method and/ or apparatus for data recovery utilizing retransmission request protocol, wherein the symbols of the retransmission signal is combined with the initial transmission signal prior to decoding (Par. 51 and 54-55).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRESHTEH N. AGHDAM whose telephone number is (571)272-6037. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/F. N. A./

Examiner, Art Unit 2611

/CHIEH M FAN/

Supervisory Patent Examiner, Art Unit 2611